

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES
PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro



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(74) Anwälte: MÜLLER, Hans usw.; Lerchenstrasse 56,
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(21) Internationales Aktenzeichen: PCT/DE2003/001918

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RO, RU, UA, US.

(22) Internationales Anmeldedatum:
11. Juni 2003 (11.06.2003)

(84) Bestimmungsstaaten (*regional*): europäisches Patent (AT,
BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR,
HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

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203 06 706.1 29. April 2003 (29.04.2003) DE

Erklärung gemäß Regel 4.17:

— Erfindererklärung (Regel 4.17 Ziffer iv) nur für US

Veröffentlicht:

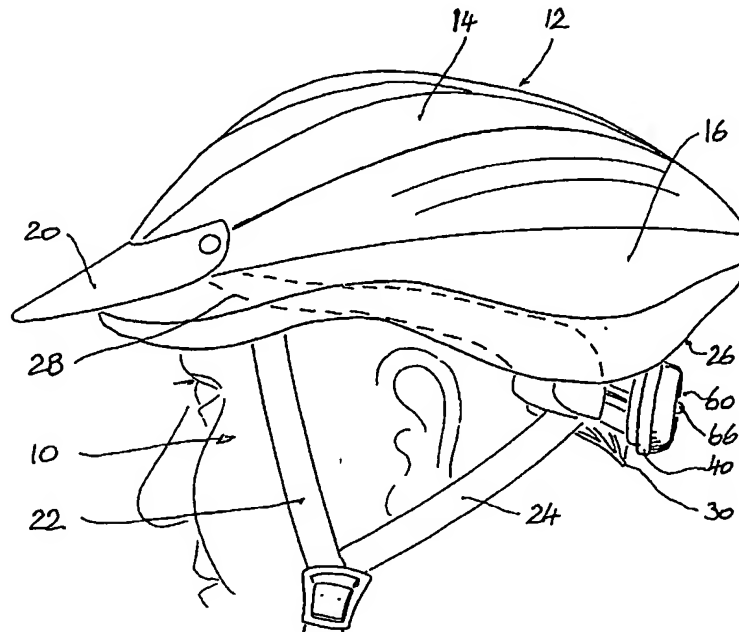
— mit internationalem Recherchenbericht
— vor Ablauf der für Änderungen der Ansprüche geltenden
Frist; Veröffentlichung wird wiederholt, falls Änderungen
eintreffen

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[Fortsetzung auf der nächsten Seite]

(54) Title: HELMET

(54) Bezeichnung: HELM



(57) Abstract: The invention relates to a helmet (12), particularly a bicycle helmet, comprising an adjusting device (30, 40) in order to adapt the size of the helmet (12) to the size of the head of an individual wearing the helmet (12). A rear light (60) is provided on the adjusting device (30, 40).

(57) Zusammenfassung: Ein Helm (12), insbesondere Fahrradhelm, besitzt eine Verstellvorrichtung (30, 40) zum grössenmässigen Anpassen des Helms (12) an die Kopfgrösse einer den Helm (12) tragenden Person. An der Verstellvorrichtung (30, 40) ist ein Rücklicht (60) vorhanden.

WO 2004/000054 A3



(88) Veröffentlichungsdatum des internationalen
Recherchenberichts: 21. Mai 2004

(15) Informationen zur Berichtigung:
Frühere Berichtigung:
siehe PCT Gazette Nr. 10/2004 vom 4. März 2004, Sec-
tion II

*Zur Erklärung der Zweibuchstaben-Codes und der anderen Ab-
kürzungen wird auf die Erklärungen ("Guidance Notes on Co-
des and Abbreviations") am Anfang jeder regulären Ausgabe der
PCT-Gazette verwiesen.*

INTERNATIONAL SEARCH REPORT

International Application No

PCT/DE 03/01918

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A42B3/04 A42B3/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A42B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 201 20 191 U (I. VOSS) 7 March 2002 (2002-03-07) the whole document	1,2,5,6, 11
A		3,4,10, 12
Y		7-9
Y	GB 2 319 716 A (A. C. A. HAYES) 3 June 1998 (1998-06-03) the whole document	7-9
A	DE 295 04 429 U (A. BABUCKE-STEINER) 11 May 1995 (1995-05-11) the whole document	1,6-10
A	DE 202 00 058 U (R. HOFMEISTER) 2 May 2002 (2002-05-02) abstract; claims; figures	1,6-10
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

4 March 2004

Date of mailing of the international search report

12.03.04

Name and mailing address of the ISA

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Bourseau, A-M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/DE 03/01918

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 86/01379 A (G. EBERT) 13 March 1986 (1986-03-13) abstract; claims; figures -----	1,6-10
X	DE 200 14 383 U (G. KRAUTER) 14 December 2000 (2000-12-14) page 8, paragraph 1 - page 13, paragraph 4 figures -----	13-15
Y		16-21
X	DE 299 05 555 U (M. KRAUTER) 15 July 1999 (1999-07-15) page 4 - page 6 claims; figures -----	13-15
Y	GB 998 695 A (INDUSTRIAL SAFETY SERVICES PROPRIETARY LIMITED) 21 July 1965 (1965-07-21) page 3, line 51 - line 86 figures 6,7 -----	16-21
A	US 4 354 283 A (THE REGENTS OF THE UNIVERSITY OF MICHIGAN) 19 October 1982 (1982-10-19) column 3, line 48 - line 52 column 4, line 18 - line 47 figures 1,4 -----	13-21
A	WO 98/05229 A (G. KRAUTER) 12 February 1998 (1998-02-12) -----	
A	US 3 388 405 A (ESB INCORPORATED) 18 June 1968 (1968-06-18) -----	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DE 03 01918

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

SEE SUPPLEMENTAL SHEET

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DE 03 01918

The International Searching Authority has determined that this international application contains multiple (groups of) inventions, as follows:

1. Claims: 1-12

helmet with back light

2. Claims: 13-21

adjustment device for helmet

INTERNATIONAL SEARCH REPORT

ation on patent family members

International Application No

PCT/DE 03/01918

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 20120191	U	07-03-2002	DE 20120191 U1	07-03-2002
GB 2319716	A	03-06-1998	NONE	
DE 29504429	U	11-05-1995	DE 29504429 U1	11-05-1995
DE 20200058	U	02-05-2002	DE 20200058 U1	02-05-2002
WO 8601379	A	13-03-1986	DE 3432039 C1	24-04-1986
			AU 4804585 A	24-03-1986
			WO 8601379 A1	13-03-1986
			EP 0193569 A1	10-09-1986
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			DE 10057814 A1	07-03-2002
			DE 10140830 A1	27-06-2002
DE 29905555	U	15-07-1999	DE 29905555 U1	15-07-1999
GB 998695	A	21-07-1965	NONE	
US 4354283	A	19-10-1982	NONE	
WO 9805229	A	12-02-1998	DE 29613682 U1	07-11-1996
			DE 29723425 U1	03-09-1998
			WO 9805229 A1	12-02-1998
US 3388405	A	18-06-1968	NONE	

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/DE 03/01918

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES
IPK 7 A42B3/04 A42B3/14

Nach der Internationalen Patentklassifikation (IPK) oder nach der nationalen Klassifikation und der IPK

B. RECHERCHIERTE GEBIETE

Recherchierte Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)
IPK 7 A42B

Recherchierte aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)
EPO-Internal

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	DE 201 20 191 U (I. VOSS) 7. März 2002 (2002-03-07) das ganze Dokument	1,2,5,6, 11
A		3,4,10, 12
Y		7-9
Y	GB 2 319 716 A (A. C. A. HAYES) 3. Juni 1998 (1998-06-03) das ganze Dokument	7-9
A	DE 295 04 429 U (A. BABUCKE-STEINER) 11. Mai 1995 (1995-05-11) das ganze Dokument	1,6-10
A	DE 202 00 058 U (R. HOFMEISTER) 2. Mai 2002 (2002-05-02) Zusammenfassung; Ansprüche; Abbildungen	1,6-10
	----- -/-	

☒ Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen

☒ Siehe Anhang Patentfamilie

* Besondere Kategorien von angegebenen Veröffentlichungen :

A Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist

E älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist

L Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, oder durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt)

O Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht

P Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist

T Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis des der Erfindung zugrundeliegenden Prinzips oder der ihr zugrundeliegenden Theorie angegeben ist

X Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann allein aufgrund dieser Veröffentlichung nicht als neu oder auf erfinderischer Tätigkeit beruhend betrachtet werden

Y Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als auf erfinderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren anderen Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachmann naheliegend ist

Z Veröffentlichung, die Mitglied derselben Patentfamilie ist

Datum des Abschlusses der internationalen Recherche

4. März 2004

Absenddatum des internationalen Recherchenberichts

12. 03. 04

Name und Postanschrift der internationalen Recherchenbehörde
Europäisches Patentamt, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Bevollmächtigter Bediensteter

Bourseau, A-M

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/DE 03/01918

C.(Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	WO 86/01379 A (G. EBERT) 13. März 1986 (1986-03-13) Zusammenfassung; Ansprüche; Abbildungen	1,6-10
X	DE 200 14 383 U (G. KRAUTER) 14. Dezember 2000 (2000-12-14) Seite 8, Absatz 1 - Seite 13, Absatz 4 Abbildungen	13-15
Y		16-21
X	DE 299 05 555 U (M. KRAUTER) 15. Juli 1999 (1999-07-15) Seite 4 - Seite 6 Ansprüche; Abbildungen	13-15
Y	GB 998 695 A (INDUSTRIAL SAFETY SERVICES PROPRIETARY LIMITED) 21. Juli 1965 (1965-07-21) Seite 3, Zeile 51 - Zeile 86 Abbildungen 6,7	16-21
A	US 4 354 283 A (THE REGENTS OF THE UNIVERSITY OF MICHIGAN) 19. Oktober 1982 (1982-10-19) Spalte 3, Zeile 48 - Zeile 52 Spalte 4, Zeile 18 - Zeile 47 Abbildungen 1,4	13-21
A	WO 98/05229 A (G. KRAUTER) 12. Februar 1998 (1998-02-12)	
A	US 3 388 405 A (ESB INCORPORATED) 18. Juni 1968 (1968-06-18)	

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/DE 03/01918

Feld I Bemerkungen zu den Ansprüchen, die sich als nicht recherchierbar erwiesen haben (Fortsetzung von Punkt 2 auf Blatt 1)

Gemäß Artikel 17(2)a) wurde aus folgenden Gründen für bestimmte Ansprüche kein Recherchenbericht erstellt:

1. ☐ Ansprüche Nr. _____
weil sie sich auf Gegenstände beziehen, zu deren Recherche die Behörde nicht verpflichtet ist, nämlich _____
2. ☐ Ansprüche Nr. _____
weil sie sich auf Teile der internationalen Anmeldung beziehen, die den vorgeschriebenen Anforderungen so wenig entsprechen, daß eine sinnvolle internationale Recherche nicht durchgeführt werden kann, nämlich _____
3. ☐ Ansprüche Nr. _____
weil es sich dabei um abhängige Ansprüche handelt, die nicht entsprechend Satz 2 und 3 der Regel 6.4 a) abgefaßt sind.

Feld II Bemerkungen bei mangelnder Einheitlichkeit der Erfindung (Fortsetzung von Punkt 3 auf Blatt 1)

Die internationale Recherchenbehörde hat festgestellt, daß diese internationale Anmeldung mehrere Erfindungen enthält:

siehe Zusatzblatt

1. ☒ Da der Anmelder alle erforderlichen zusätzlichen Recherchegebühren rechtzeitig entrichtet hat, erstreckt sich dieser internationale Recherchenbericht auf alle recherchierbaren Ansprüche.
2. ☐ Da für alle recherchierbaren Ansprüche die Recherche ohne einen Arbeitsaufwand durchgeführt werden konnte, der eine zusätzliche Recherchegebühr gerechtfertigt hätte, hat die Behörde nicht zur Zahlung einer solchen Gebühr aufgefordert.
3. ☐ Da der Anmelder nur einige der erforderlichen zusätzlichen Recherchegebühren rechtzeitig entrichtet hat, erstreckt sich dieser internationale Recherchenbericht nur auf die Ansprüche, für die Gebühren entrichtet worden sind, nämlich auf die Ansprüche Nr. _____
4. ☐ Der Anmelder hat die erforderlichen zusätzlichen Recherchegebühren nicht rechtzeitig entrichtet. Der internationale Recherchenbericht beschränkt sich daher auf die in den Ansprüchen zuerst erwähnte Erfindung; diese ist in folgenden Ansprüchen erfaßt: _____

Bemerkungen hinsichtlich eines Widerspruchs

- ☐ Die zusätzlichen Gebühren wurden vom Anmelder unter Widerspruch gezahlt.
- ☒ Die Zahlung zusätzlicher Recherchegebühren erfolgte ohne Widerspruch.

WEITERE ANGABEN

PCT/ISA/ 210

Die internationale Recherchenbehörde hat festgestellt, dass diese internationale Anmeldung mehrere (Gruppen von) Erfindungen enthält, nämlich:

1. Ansprüche: 1-12

Helm mit Rücklicht

2. Ansprüche: 13-21

Verstellvorrichtung für Helm

INTERNATIONALER RECHERCHENBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen

PCT/DE 03/01918

Im Recherchenbericht angeführtes Patentdokument		Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
DE 20120191	U	07-03-2002	DE 20120191 U1	07-03-2002
GB 2319716	A	03-06-1998	KEINE	
DE 29504429	U	11-05-1995	DE 29504429 U1	11-05-1995
DE 20200058	U	02-05-2002	DE 20200058 U1	02-05-2002
WO 8601379	A	13-03-1986	DE 3432039 C1	24-04-1986
			AU 4804585 A	24-03-1986
			WO 8601379 A1	13-03-1986
			EP 0193569 A1	10-09-1986
DE 20014383	U	14-12-2000	DE 20014383 U1	14-12-2000
			DE 10057814 A1	07-03-2002
			DE 10140830 A1	27-06-2002
DE 29905555	U	15-07-1999	DE 29905555 U1	15-07-1999
GB 998695	A	21-07-1965	KEINE	
US 4354283	A	19-10-1982	KEINE	
WO 9805229	A	12-02-1998	DE 29613682 U1	07-11-1996
			DE 29723425 U1	03-09-1998
			WO 9805229 A1	12-02-1998
US 3388405	A	18-06-1968	KEINE	

HELMET

DESCRIPTION

The invention concerns a helmet, like in particular a bicycle helmet, how it is used for example from a bicycle driver to the protection of its head. Such generally as the head it basic person protecting safety helmet possesses an impact-absorbing base. This base can consist of according to impact-absorbing plastic material. Often such a base is taken off from the outside by a decoration bowl. STATE OF THE ART of helmets of the kind initially specified are well-known in most varied remarks. Like that a bicycle helmet and a procedure for manufacturing the same are well-known from the DE 195 17 642, with which the bicycle helmet exists of a base and a one only in the sales agencies of bicycle helmets at the base fastening decoration bowl. By means of under the chin person-led around attachment belts can the helmet to the head of the person be fastened. The attachment belts run thereby between the base and the decoration bowl, so that they are freely accessible after removing the decoration bowl from the outside. Due to differently large head extent beyond that an adjuster is for these belts well-known, in order to be able to adapt the helmet to the head size the helmet to basic in each case person individually. This Adjuster is fastened to the belts and in addition to flexible volumes and/or tape sections, which surround inside the helmet opening at least partly extent-moderately. Since such helmets are to be recognized and concomitantly the helmet basic persons in the darkness badly, it is for example well-known from the DE U 92 09 257 to dye the helmet with a signal color or with fluorescent color outside. Beside these helmets with passive luminosity also helmets are well-known, which are provided with an actively shining reflector. These reflectors are attached at the helmet bowl, which makes appropriate constructional changes of the basic bowl and/or decoration bowl of such helmets necessary. REPRESENTATION of the INVENTION on the basis of this before-well-known state of the art is the basis the invention the task to indicate an improved helmet. This invention is given by the characteristics of the principal claim. Meaningful training further of the invention are subject to further requirements. According to invention is intended that a taillight at the adjuster is present, with which the helmet to the head size the helmet basic person be individually adapted can. Thus one is by the taillight caused constructional change of the basic bowl or the decoration bowl and thus completely generally a change of the actual helmet not necessary. After a completely substantial characteristic of the invention the taillight is at or in a rotary button is attached, by means of that the adjuster handled for adaptation of the helmet to the head size of a person. The taillight is present thereby so at the rotary button, which is aligned its shining means for the rear end of the helmet. From rear directions thereby such a helmet thereby shows itself also with bad lighting conditions well, without it of an active strange source of light, as would have to be illuminated by vehicle headlights. In addition the placement of the taillight at the rotary button is an economically very favorable possibility of equipping the helmet with a taillight; the rotary button and the taillight can possess both a circular exposed surface, so that also in optical regard the appearance does not change such a helmet basic person practically, if one actually refrains from the taillight. The taillight can be solvable fastened to the rotary button. So the taillight can be fastened for example to the rotary button anklipsbar, racable or so on. With this execution form the rotary button could be left constructionally to a large extent unchanged. It is however also possible to design the taillight and the adjustment button as einstueckiges construction unit. The taillight would be adjustment button and/or the adjustment button then always also at the same time would

be taillight always also at the same time. In order to be able to switch the taillight off ein-und, an appropriate in-/ circuit breaker could be intended, that at the taillight available is and for example by putting the taillight on on the rotary button automatic operated as one shifts in particular. By the up and again setting the taillight off on a rotary button could automatically be switched off thus the shining means of the taillight ein-und. In addition also a separate in-/ circuit breaker for the taillight at that for example taillight or at the rotary button could be planned. It would be also possible to connect the shining means of the taillight heading for select electronics with one vibration alarm unit and/or with a twilight switch control-moderately so that with vibrations and/or with no longer sufficient lighting conditions the shining means is turned on automatically and/or remains turned on. In the latter case into select electronics in addition integrated timer could be useful, in order to be able to bridge smaller or large-vibrationless time intervals switch-free. The shining means could remain for not sufficient lighting conditions thus with vibrations affecting the helmet and at the same time to be switched on and/or switched on. This considers the circumstance that the taillight always in relatively small time intervals vibrations affect, if a person carries with such taillight an equipped helmet and itself thereby for example on a bicycle moved. The shining means can preferably be equipped in form of only one light emitting diode. This light emitting diode can be trained also as in-/ circuit breakers as appropriate switching of the diode. Shining means like in particular those at least a light emitting diode can be present in or at the rotary button as well as electronics with select electronics and with the battery, necessary for the enterprise, as complete construction unit. After a remark example represented in the design a soil or a cover at the rotary button can be solvable present. Into the rotary button existing without soil and/or cover then as ring the battery or if necessary also the whole taillight from direction of the soil or cover can be inserted into the ring. In this way at least the battery can be replaced in a simple manner. With a remark example represented in the design the adjuster of the helmet possesses one in longitudinal direction zug-und pressure resistant oblong flat material strips with two Kragarmen. At each Kragarm an adjusting link is adjustably stored and led in longitudinal direction along the Kragarmes. At both adjusting links at least a volume rotating partly extent-moderately around the helmet opening is coupled. Each adjusting link is in such a way fastened over a course member to the rotary button that through tricks of the rotary button into a certain direction of rotation both adjusting links move away in each case from the ends of the Kragarme and/or move on the ends. In the direction of rotation the helmet opening can be made smaller thus and be increased in the other direction of rotation. The two course members can be thereby at the same time also as compression members trained. The rotary button can be racable trained in its different turning positions, in order the size of the helmet opening stopped by the rotary button invariably too leave and the helmet on the head of a person hin-und slip ago not let. After a further remark example represented in the design the adjustment direction provided with a taillight is in each case adjustable not only in one but in two directions back and forth at the helmet to plan. The adjuster can be adapted then on the one hand by adjusting in the first adjustment direction to the respective head extent; additionally Verstellvorrichtung-und thereby can be also arranged taillight altogether more near or further at the helmet by adjusting the adjuster in the second adjustment direction, which is possible transverse to the first adjustment direction. Thus for example differently formed helmets can be equipped with the same adjuster and be considered with it concomitantly designerische desires regarding an optimal helmet within the rear range. The helmets can possess in their rear range differently large a figurations and be differently formed thus. According to invention the same adjuster can be planned for such differently formed helmets. Nevertheless the existing in each case adjuster can be operated practically in the same way well at the different helmets. The adjuster can be attached at the two free ends on the inside helmet of the existing head volume. The ends of the head

volume in the first adjuster can be moved away by the adjuster one on the other too and from each other. Additionally the adjuster can be fastened altogether to the two ends of the head volume to different places, so that the adjuster can be adjusted altogether in a second adjuster relative to the helmet. This second adjustment direction is in an angle more largely zero for first adjustment direction available. This adjusting possibility in the second adjustment direction can be carried out constructionally simply by the fact that at the two ends of the head volume several Attachment places for the adjuster to be planned. This several attachment places can be intended instead of at the ends of the head volume also at the adjuster. The possible several attachment places can be carried out for example by a mounting rail, which is present in the respective final range of the head volume or the adjuster. Further arrangements and advantages of the invention are to be inferred from the characteristics further specified in the requirements as well as the following remark example. SHORT DESCRIPTION of the DESIGN the invention is more near described and described in the following one on the basis the remark examples represented in the design. Show: Fig.1 a side view of a person carrying a helmet according to invention in accordance with a first type, Fig. 2 a back opinion of the helmet in accordance with Fig. 1, without taillight, Fig. 3 a side view of the taillight after Fig. 1, briefly before postponing from backwards on the adjustment button the adjuster of the helmet after Fig. 2, Fig. 4 a back opinion of the taillight of the Fig. 3, Fig. 5 a side view of a person carrying a helmet according to invention in accordance with a second execution form, Fig. 6 a back opinion of the helmet in accordance with Fig. 5, without taillight. The head 10 one shows WAYS TO IMPLEMENTING the INVENTION figure 1 in the available case of bicycle driver, who is protected with a helmet 12. In the available case of example the bicycle helmet 12 possesses a decoration bowl 14, which covers a base 16 from above and outside to a large extent. The decoration bowl 14 is from a flexible thin plastic material, while the base 16 consists of an impact-absorbing plastic material. A small sign 20 is angeklipst fastened in front to the decoration bowl 14. By means of attachment belts 22.24, which run along between the base 16 and the decoration bowl 14 and can under the chin be locked with one another, the helmet 12 can be fastened firmly and nevertheless solvable to the head 10. On the inside of the helmet, over the helmet opening 26 around, partly runs strut 28, which is relatively softly together pressable and thus a softly fitting and nevertheless firm seat of the helmet at the head for 10 makes possible. For the extent-moderate adjustment of the head volume 28 to the extent of the head 10 the ends of the head volume 28 fastened to an adjuster 18 are, which a flat material touch 30 possesses, which is in the rear range of the helmet. This flat material strip 30 carries two Kragarme 32.34 on its back. Between the flat material strip 30 and the two Kragarmen 32.34 the two rear attachment belts 24 are through led. Along each Kragarmes 32.34 a left and/or right adjusting link is 36.38 lengthwise en ski-bleached the Kragarmes concerned 32.34 available. The two adjusting links 36.38 are fastened thereby to the two ends of the head volume 28. In the center between the two Kragarmen 32.34 of the flat material strip 30 a rotary button 40 is present, to which a left and right course member 42.44 is fastened. The other end of everyone of the two course members 42.44 is fastened to the adjusting link 36 and/or 38. The rotary button 40 represents a one-piece plastic part together with the two Kragarmen 32.34. The course members, which are in the available case relatively rigid wires, are in such a way fastened to the rotary button 40 that through tricks of the rotary button 40 for example into the direction of rotation 50 the two adjusting links 36.38 on the rotary button 40 move. By tricks of the rotary button 40 in direction of rotation 50 thus the ends of the head volume 28 can be approached one on the other and thus the helmet opening 26 to be made smaller. Since the rotary button 40 is racable trained in its appropriate turning position, then the turning position of the rotary button 40 wished in each case can be maintained until again at the rotary button 40 one turns according to plan. By appropriate rotation in for direction of rotation 50

the two adjusting links 36,38 of the rotary button can other direction be moved away, whereby the helmet opening 26 becomes larger. Onto the rotary button 40 a taillight 60 can be pushed from the rear. This taillight 60 possesses a voluminous soil 62, in which electronics (printed circuit board 63) and a battery 64 are arranged. Centrally a light emitting diode 66 away-stood attached, those outward, backwards for something from the solidium of the taillight. On the inside of the soil 62 a push button switch 68 is present. The push button switch 68 is surrounded by a wall 70. The range of the wall 70 can be pushed from rear direction (arrow 72) from the rear onto the rotary button 40. The inside of the wall 70 is so structured trained that a sufficient firm seat of the taillight 60 at the rotary button 40 is possible. The inside of the wall 70 intervenes klipsartig or blockable in the circulating corrugation 76 of the rotary button 40. When putting the taillight 60 on the switch 68 is imprinted and thus the light emitting diode 66 is switched on. By loosening of the taillight 60 of the rotary button 40 the switch 68 is again eased, so that it itself again in in Fig. 3 position shown moves backward. This entails a switching of the taillight 60 off. The taillight 60 could be trained also with the rotary button 40 as one-piece, firm construction unit. The taillight 60 would be then always at the same time rotary button and/or the rotary button then always also at the same time taillight. From the for example head-lateral side of this construction unit out then an exchange possibility for the battery 64 could be created. Instead of the switch 68 also the light emitting diode 66 could be trained as push button switches as Ein-und switching the taillight 60 off constructionally. By the arrangement of the taillight 60 within the range of the rotary button 40 the remaining parts of the helmet adjuster and in particular the helmet bowl do not need to be changed constructionally. In addition the taillight 60 is protected platziert in the range of the rotary button 40gleichsam"unterhalb"des of helmet 12. In Fig. 12,2 corresponds to 5 represented helmet as far as possible to the helmet 12. Also on its inside, over its lower helmet opening 26 around, partly runs strut 28, which is relatively softly compactible and thus a softly fitting and nevertheless firm seat of the helmet for 12,2 at the head 10 makes possible. For the extent-moderate adjustment of the head volume 28 to the individually in each case existing extent of the head 10 as with the helmet 12 the left end of 29 and the right end of 31 of the head volume 28 fastened to the left end 33 are and the right end of 35 of an adjuster 18,2, as is still below more near described. The adjuster 18,2 possesses a flat material strip 30,2 in the available case of example, with which the adjuster rests 18,2 against the rear side of the head 10. The helmet 12,2 rests thus with its to strut 28 and with the flat material strip 30,2 extensively against the head 10. This flat material strip 30,2 carries 12 two one-piece connected Kragarme 32,34 just like the helmet. Between the flat material strip 30 and the two Kragarmen 32,34 the two rear attachment belts 24 are passed through. Along each Kragarmes 32,34 a left and/or right adjusting link 36,2, 38,2 along relocatable the Kragarmes concerned 32,34 is present. The two adjusting links 36,2, 38,2 are fastened to the left end of 29 and/or right end of 31 of the head volume 28. The adjusting link 36,2-und corresponding applies to the right adjusting link 38,2-besitzt of two holes 39,41. In the left end of 29 of the head volume 28 four pins 46,47, 48,49 are auskragend fastened in the available case. On in each case two pins of these altogether at the left end of 29 existing four pins can the adjusting link 36,2 be put on. In the case of example represented in the design the adjusting link 36,2 is fastened in the lower two pins 48,49 of the left end of 29 of the head volume 28. The two pins 48,49 project firmly in-sitting into the holes 39,41 of the adjusting link 36,2. The left end of 29 of the head volume 28 could be inserted also into the two pins 47,48 or also into the two pins 46,47. Thus the left end of 29 of the head volume 28 can be fastened around altogether two stages upward, relative to the helmet 12,2, transferred to strut 28. Comparable applies to the right end of 31 of the head volume 28. Meant four pins are 46,47, 48,49 also there available. Also the right end of 35 of the adjuster 18 and thus the adjusting link 38,2 possess the two holes 39,41. In the center between the two Kragarmen

32.34 des Flachmaterialstreifers 30,2 ist das managende bereits erwähnte Drehknopf 40 verfügbar, an welchem die linke und rechte Course-Membran 42,44 befestigt sind. Das freie in jedem Fall Ende der beiden Course-Membranen 42,44 ist an der linken Einstellstange 36,2 und/oder an der rechten Einstellstange 38,2 zug- und druckresistent verbunden, da die beiden Course-Membranen in der verfügbaren Fallbeispiel relativ steife Drähte sind. Durch Drehen des Drehknopfs 40 in Drehrichtung 50 werden die beiden Einstellstangen 36,2, 38,2 am Drehknopf 40 in die erste Einstellrichtung 80 bewegt und somit das Helmöffnungsmaß 26 verkleinert. Durch entsprechende Drehung in die entgegengesetzte Drehrichtung 50 werden die beiden Einstellstangen 36,2, 38,2 durch den Drehknopf 40 bewegt, wodurch das Helmöffnungsmaß durch sich selbst links Ende von 29,31 des Kopfvolumens 28 von einander weg um 12 vergrößert wird, wie das in Verbindung mit dem Helm. Zusätzlich zum Helm 12 verlässt der Verstellmechanismus 18,2 des Helms 12,2 insgesamt abhängig von seiner Befestigung an zwei Pins 46,47 und/oder 47,48 und/oder 48,49 in eine zweite Einstellrichtung 82 weiter auf dem Helm oder von der Helmverstellung. Diese zweite Einstellrichtung 82 steht senkrecht zur ersten Einstellrichtung 80 und steht in der verfügbaren Fallbeispiel etwa senkrecht zur ersten Einstellrichtung 80. Zusammen mit dem Verstellmechanismus 18,2, dem Drehknopf 40 und somit einer Leuchte 60 in die zweite Einstellrichtung 82-relativ trainiert am Drehknopf 40 lassen sie sich an der Basis 14 des Helms 12,2-verstellen. Der Verstellmechanismus 18,2 ist auch ohne Vorhandensein einer Leuchte 60 von erfindungsgemäßer Wichtigkeit.

CLAIMS

01) Helm (12,12. 2), insbesondere Fahrradhelm, gekennzeichnet durch eine Verstellanpassung in der Größe des Helms an die Kopfgröße der Person, durch die Tatsache, dass - eine Leuchte (60) an der Verstellmechanismus (18, 18,2, 30,30. 2,40) vorhanden ist.

02) Helm gemäß Anspruch 1, dadurch gekennzeichnet, dass - der Verstellmechanismus (18,18. 2) einen Drehknopf (40) zum Einstellen des Helms (12,12. 2) besitzt, - die Leuchte (60) mehr an/oder in den Drehknopf (40) so angebracht ist, dass - das Leuchtenmittel (66) der Leuchte (60) für das hintere Ende des Helms (12,12. 2) ausgerichtet ist.

03) Helm gemäß Anspruch 1 oder 2, dadurch gekennzeichnet, dass - die Leuchte (60) am Drehknopf (40) lösbar befestigt ist.

04) Helm gemäß Anspruch 3, dadurch gekennzeichnet, dass - die Leuchte (60) an den Drehknopf (40) anklipsbar oder verschraubt befestigt ist.

05) Helm nach einem der Ansprüche, dadurch gekennzeichnet, dass - die Leuchte und der Drehknopf der Verstellmechanismus (18,18. 2) als integral, einstückiges Bauelement vorhanden sind.

06) Helm nach einem der Ansprüche, dadurch gekennzeichnet, dass - ein in-/ Stromkreis-Unterbrecher (68) für die Leuchte (60) vorhanden ist, - der Schalter (68) durch Betätigen der Leuchte (60) an den Drehknopf (40) der Verstellmechanismus automatisch betätigbar ist wie in der besonderen Ausführungsform.

07) Helm nach einem der Ansprüche, dadurch gekennzeichnet, dass - das Leuchtenmittel wie insbesondere solche mit mindestens einer Leucht-emittierenden Diode (66) schaltend selektierte Elektronik (63) mit einem Vibrationsalarmeinheit und/oder mit einem Vibrations-Schalter so angebracht ist, dass er durch Vibrationen

and/or with dawn light and/or with darkness the shining means and/or the light emitting diode (66) and/or remains turned on.

08) helmet according to requirement 7, by the fact characterized that - select electronics (63) a timer possesses.

09) helmet after one of the managing requirements, by the fact characterized that - the taillight (60) at least a light emitting diode (66) contains.

10) helmet according to requirement 9, by the fact characterized that - at least a light emitting diode (66) when in-/ circuit breaker is trained.

11) helmet after one of the managing requirements, by the fact characterized that in or at the rotary button (40) the shining means like in particular those at least a light emitting diode (66) and the electrical connection with select electronics (63) and with battery (64), necessary for the enterprise of the shining means, when altogether complete construction unit is present.

12) helmet after one of the managing requirements, thereby characterized that - a soil or a cover at the rotary button of the adjustment pre direction is solvable present - the rotary button without soil and/or without covers as ring is present, - a battery and/or the taillight altogether from direction of the soil or the cover into the ring are applicable and/or are.

13) helmet after one of the managing requirements, thereby characterized that - the adjuster (18,18. 2) one in their longitudinal direction zug-und pressure resistant oblong Flachmaterialstreifen (30,30. 2) with two Kragarmen (32,34) possesses, - at both Kragarmen (32,34) at least a volume (28) rotating partly extent-moderately around the helmet opening (26) is couplable, - an adjusting link (36,36. 2.38, 38,2) at each Kragarm (32,34) in longitudinal direction of the respective Kragarmes (32, 34) is adjustably stored, - each adjusting link (36,36. 2.38, 38,2) over a course member (42,44) to the rotary button (40) is so fastened that - through tricks of the rotary button (40) move away in each case into a certain direction of rotation the adjusting links of the ends of the Kragarme or move in each case.

14) helmet according to requirement 13, by the fact characterized that - both course members (42,44) also in each case as compression members are trained.

15) helmet after one of the managing requirements, by the fact characterized that - the rotary button (40) of the lathe fixture in its different turning positions is racable.

16) helmet after one of the managing requirements, by the fact characterized that - the adjuster (18.2) altogether in one to the head extent level transverse direction (82) is adjustable.

17) helmet according to requirement 16, by it characterized that - strut a (28) at the inside of the helmet (12) is present - strut the (28) around the helmet opening (26) nearly completely, - the two free ends (29,31) of the head volume (28) to the adjuster (18.2) are so fastened that - strut (28) together with the adjuster (18) extensively the head (10) the helmet (12,12. 2) basic person encloses, - the two ends (29,31) of the head volume (28) in a first adjustment direction (80) by the adjustment pre direction (18.2) one on the other too and from each other move awayable are, -

such different places of the two ends (29, 31) the head volume (28) at the adjustment pre direction (18.2) in each case it are fastenable that - the adjuster (18.2) altogether in a second adjustment direction (82) relative to that strut (28) at the same fastenable is, - this second adjustment direction (82) in an angle more largely zero for first adjustment direction (80) present is.

18) helmet after one of the requirements 16 or 17, by the fact characterized that - at each end (29,31) of the head volume (28) several attachment places (46.47, 48.49) for the adjustment pre direction (18) are present.

19) helmet after one of the requirements 16 to 18, by it characterized that at the adjuster (18.2) is present several attachment places (39,41) for the respective end of the head volume (28).

20) helmet after one of the requirements 16 to 19, by it characterized that - within the final range of the head volume (28) a pin row is present - in the adjuster at least a hole is present, into which at least a pin of the pin row is solvable fastenable importable and thus the adjuster (18.2) at that strut (28).

21) helmet after one of the requirements 16 to 20, by it characterized that - within the final range of the head volume (28) a mounting rail is present - in the adjuster (18.2) a fastener is present, which is in only some the holes, preferably into a hole of the mounting rail importable and thus the mounting device solvable at that strut fastenable.